How Bank Regulation, Supervision and Lender Identity Impact Loan Pricing: a cross-country Comparison

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Abstract

This paper assesses the extent to which a country' bank regulation and supervision practices impact the pricing of both domestic and foreign loans to borrowers in that country, after accounting for the effects of the countries' legal and institutional characteristics. For the first time in the literature we show that banking-commerce integration and banking concentration are important determinants of loan pricing, through a cross-country study involving 49 countries. We find that lender identity also plays an important role in the setting of loan pricing. In countries with high degrees of integration of banking and commerce, domestic lenders charge lower rents due to stronger lender-borrower relationships and reduced agency costs while foreign lenders exercise greater monitoring and extract higher loan rents as a way of compensating their greater risk exposure. However, the benefit of lower loan costs received from domestic lenders (due to banking-commerce integration) vanishes in countries with high banking concentration. Additionally, in countries with higher banking concentration, foreign lenders provide favorable contract terms to attract borrowers. Our results suggest that failure to recognize the impact of a country's bank regulation and supervision practices and the identity of the lender (whether domestic or foreign) in the examination of loan contract terms, may lead to incorrect conclusions.

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1. Introduction

Prior studies have shown the importance of the difference in bank regulation and supervision across countries. Barth, Nolle, and Rice (1997) document a wide range of banking structures and supervisory practices across 15 European Union countries, and Canada, Japan, Switzerland, and the U.S. Demirguc-Kunt, Laeven, and Levine (2004) (hereafter DLL) highlight the importance of bank regulation and supervision. They find that bank regulations affect banks' net interest margins and overhead costs.[1] In this paper we further explore the importance of bank regulation and supervision and analyze the direct relationship between bank regulation and supervision, lender identity, and loan pricing in a cross-country study. How do differences in a country's bank regulation and supervision practices impact the pricing of domestic and foreign loans to the country's borrowers, after accounting for the effects of the country's legal and institutional characteristics? In this paper, we focus on the influence of two measures of bank regulation and supervision, namely, banking-commerce integration and banking concentration.

Differences in the affiliation of banking and commerce indicate the different extents of banks' (non-financial firms') abilities to own or control non-financial firms (banks). There are two related yet distinct ways to measure the integration of banking

[1] In Demirguc-Kunt, Laeven, and Levine (2004), the bank net interest margins are the interest income minus interest expense divided by interest-bearing assets.

and commerce. One, is for a bank to own a stake in a non-financial firm, while the other, is for a non-financial firm to own a stake in a bank. The restrictions on the affiliation of banking and commerce affect the building of close lender-borrower relationships which influence the way lenders monitor borrowers and affect the setting of loan contract terms. These effects would, in turn, influence borrowers' incentives, as well as the cost and amount of funds available to borrowers. Given mutual ownership between banks and firms, the agency conflict between shareholders and debtholders in a firm may be reduced and it is easier for the bank to dispose of assets seized in a loan default (Prowse (1990), Haubrich and Santos (2005)). On the other hand, such mutual ownership may negatively impact the firm's investment efficiency and the bank's risk exposure. With large equity shares, banks are more likely to allow the firms to undertake risky projects and firms may force banks to finance their risky investments in the cases where firms have controlling shares of banks (Park (2000)). Prior studies have various views on the integration of banking and commerce and mainly link banking-commerce integration to financial distress (Hoshi, Kashyap, and Scharfstein (1990)) and firms' investment decision (Prowse (1990), Hoshi, Kashyap, and Scharfstein (1991), among others), mostly in countries like the U.S., Japan, and Germany. In contrast to prior studies, this paper explicitly examines the impact of banking-commerce integration on loan pricing by examining both domestic and foreign lenders in a cross-country study.

We also examine the impact of banking concentration on loan pricing by domestic and foreign lenders. In the literature, there are two contrasting views regarding the impact of banking concentration on bank performance; the market-power theory and the efficient-structure theory (Berger (1995), Corvoisier and Gropp (2002), among others).

The market-power theory suggests that banks collude and use their market power to extract monopoly rents. On the other hand, the efficient-structure theory posits that banking concentration increases the overall efficiency as more efficient banks grow more rapidly than less efficient ones. This paper explicitly examines the extent to which banking concentration impacts loan prices of both foreign and domestic lenders by employing a large cross-country data sample. We find evidence supporting the efficient-structure argument when looking at foreign lenders.

In this paper we also investigate whether bank regulation and supervision policies have different impacts on the lending behaviors of foreign and domestic lenders, while lending to borrowers in the host country. Taking advantage of a unique cross-country database, this paper assesses the different impacts of host countries' banking characteristics on different lenders' behavior in loan pricing. In the empirical analysis of this study, we create two sub-samples associated with different types of lenders: foreign and domestic. In the foreign lender category, all lenders associated with a loan are headquartered outside the borrower country; while in the domestic lender category, all lenders associated with a loan are from the borrower country.[2]

The main empirical findings of this paper are as follows. First, the level of the host countries' banking-commerce integration and banking concentration are important determinants of loan prices. This paper establishes the importance of bank regulations using loan-level data and presents evidence that bank regulations matter for financial

[2] In this study, we include both syndicated loans and non-syndicated loans. For classifying syndicated loans as foreign or domestic, we require that all lead lenders of the loan belong to either the foreign or domestic category while for classifying non-syndicated loans we require all lenders associated with the loan to belong to the same category, i.e., either foreign or domestic. We classify all loans not fulfilling these criteria as mixed loans.

outcomes.[3] Second, domestic and foreign lenders react differently to host countries' regulation and supervision practices. In countries with high integration of banking and commerce (as measured by equity holdings between banks and firms), domestic lenders tend to charge lower spreads due to the direct equity holdings and stronger relationships between banks and firms. On the other hand, since foreign lenders lack the advantages of equity and lending relationships with borrowers relative to domestic lenders they have to exercise greater monitoring relative to domestic lenders, thus extracting higher loan rents as a way of compensating their larger risk exposure. Third, we also find evidence of a non-linear relationship between bank regulations and loan pricing. Specifically, the benefit of lower loan costs received from domestic lenders vanishes in countries with high banking concentration. At the same time, in countries with higher banking concentration, foreign lenders tend to provide favorable contract terms (lower loan prices) to attract borrowers. Fourth, contrary to previous papers in the literature (Qian and Strahan (2005)), we uncover new evidence that certain variables also have different impacts on loan pricing between domestic and foreign lenders. Thus, failure to take lender identity into account might lead to incorrect conclusions in some cases. Finally, we also present corroborative evidence that host countries' legal and institutional variables are important determinants of international loan contracts terms. For instance, loan costs are lower in countries with strong creditor rights, and established traditions of law and order, and more developed financial sectors. These results are consistent with those in prior studies such as Qian and Strahan (2005).

[3] In a recent study, DLL (2004) find that, after accounting for economic freedom or property rights protection, banking concentration does not explain cross-bank operational performance (measured by net interest margins and overhead costs) using bank-level data. However, the focus of this paper is different.

This paper contributes to the literature in three ways. First, to the best of our knowledge, this is the first paper in the literature which explicitly examines how host countries' banking-commerce integration and banking concentration impact the determination of loan pricing in a cross-country setting. This paper presents evidence of the importance of bank regulations for financial outcomes using loan-level data.

Second, for the first time in the literature, this paper establishes that the impact on loan pricing is different for domestic and foreign lenders. Domestic lenders and foreign lenders react differently to host countries' bank regulation and supervision practices, which is reflected through the pricing mechanism.[4] We show that the impact of bank regulation and supervision variables on loan pricing is different between domestic lenders and foreign lenders, and our result highlights the importance of incorporating lender identity when analyzing the determinants of loan pricing.[5]

Third, by exploiting a new database on bank regulation and supervision practice, we conduct a cross-country study of the impact of banking regulation and supervision on loan pricing, covering 49 different developing as well as developed countries. We show that different countries have distinct bank regulation and supervision practices and these differences are reflected in loan pricing.

The remainder of this paper is organized as follows. In section 2, we briefly discuss the related literature and the primary proxies used to capture different countries'

[4] In prior studies, Carey, Post and Sharpe (1998) demonstrate that banks and finance companies differ in corporate lending. Harjoto, Mullineaux and Yi (2004) show that investment banks price debt claims differently than commercial banks due to differences in funding access, regulation, accounting rules, scope economies, and the relevance of relationships. Even for the same type of lenders – banks, there are considerable difference in bank lenders' monitoring abilities which influences the setting of loan prices as shown in Coleman, Esho and Sharpe (2004).

[5] Similar to this result of ours, Qian and Strahan (2005) find that domestic bank participation is negatively related to the loan interest rate. They argue, that since domestic banks have information advantages relative to foreign banks, foreign banks tend to charge higher loan spreads in deals where domestic banks are unwilling to fund a significant portion.

macro-level characteristics. We also outline our hypotheses. Section 3 describes the data. The results of our empirical tests are reported in Section 4. Section 5 concludes.

2. Country level characteristics and hypotheses

In this section, we first describe the host countries' characteristics of interest-banking-commerce integration and banking concentration, and our hypotheses related to those variables. We follow with a description of the proxies we employ for host countries' legal and institutional characteristics. Our control variables are also discussed in this section.

Banking-commerce integration

This paper uses measures of integration of banking and commerce, which is an important characteristic of banking regulation and supervision and has significant impact on firms' investment decisions (John, John and Saunders (1994), Saunders (1994), and Prowse (1990), among others). In this paper, we analyze the extent to which differences in the affiliation of banking and commerce across countries affect the determination of loan pricing, and how this relationship varies when we take into account lender identity.

Prior studies have documented the benefits and costs of banking-commerce integration. There are generally five primary causes for restricting banking-commerce integration (Barth, Caprio, and Levine (2004)). First, conflicts of interest may arise as banks engage in diverse activities. With large equity holdings in firms, banks have greater incentives to finance risky projects of their portfolio firms, which leads to an increase in the firms' debt holdings and thus increases the risk of the bank's investment portfolio. Consequently, it also increases the need for monitoring of the other

debtholders of the firm. Second, banks are more likely to take more risk if they are allowed to engage in a broader range of activities. Third, it is difficult to monitor complex banks. Fourth, banks may become so politically and economically powerful that they become "too big to discipline". Finally, large financial conglomerates may lead to less competition and inefficiency.

As suggested by Prowse (1990), differences in banking-commerce integration may affect the degree to which large investors can reduce principal-agent conflicts between firms' shareholders and debtholders. Moreover, the economic success of the German and Japanese economies are partly attributed to the direct equity links and lending relationships developed between banks and firms in those economies.

In our cross-country analysis, by considering different degrees of banking-commerce integration and thus lender-borrower relationships across economies, we examine whether direct equity links and lending relationships between lenders and borrowers are reflected in loan pricing. This paper employs two measures on the degree of regulatory restrictiveness on banking-commerce integration.[6] They are as follows:

1). banks owning non-financial firms. This variable measures restrictions on the abilities of banks to own and control non-financial firms and classifies them as: unrestricted, permitted, restricted, and prohibited. For the purposes of our analysis we code this variable as a dummy taking on 4 values, 3, 2, 1, and 0 respectively.

2). Non-financial firms owning banks. This variable measures restrictions on the abilities of non-financial firms to own and control banks and classifies them as:

[6] The measures are obtained from a World Bank survey conducted on bank regulation and supervisory practices for 107 countries. The survey was updated till 2003. The survey is presented in the following link: http://wbln0018.worldbank.org/html/FinancialSectorWeb.nsf/SearchGeneral?openform&Banking+Systems&Databases. More details about the survey are available in Barth, Caprio and Levine (2004).

unrestricted, permitted, and restricted. Again, we code this variable as a dummy taking on 3 values, 2, 1, and 0 respectively.

Including these two variables helps us to capture the characteristics of host countries in more detail and helps explain the impact of host countries' country-level attributes on loan pricing better than previous studies. For instance, France and Germany have different legal traditions while they have similar policies on banks owning non-financial firms. In contrast, the U.S. has much more stringent policies on the affiliation of banking and commerce than does the U. K. even though the U.S. and the U. K. have comparable legal systems. The evidence shows that different economies have very different bank regulation and supervision policies. In view of this, we conjecture that, apart from host countries' legal and institutional variables, banking-commerce integration variables are important determinants of loan contract terms.

Banking theory can shed light on the possible impact of banking-commerce integration on loan pricing. The banking literature shows that banks act as delegated monitors. In the presence of imperfect and asymmetric information, banks serve as firm monitors, becoming informed lenders in the process (Diamond (1984) and Fama (1985)). A lender becomes an even closer and more informed lender if the lender owns equity in the firm in addition to debt relative to a lender without equity positions in the firm. The close relationship between the lender and the borrower helps information flow from the firm to the lender and mitigates information asymmetry. Lenders owning equity positions in firms can exercise greater monitoring and control over borrowers. On the other hand, when the firm owns or controls the bank, it is able to receive financing from the bank at lower cost. Integrating banking-commerce leads to the reduction of agency

costs and the costs of asymmetric information. The affiliation of banking and commerce may reduce the cost of distorted risk-taking incentives by firms given the closer lender-borrower relationships (John, John, and Saunders (1994)). Accordingly, we expect that loan financing cost will be lower given mutual equity links and close relationships between banks and firms.

Moreover, given the mutual equity holding between banks and firms, banks may make improper transactions with their affiliates that increase the risk of bank assets rather than improve efficiency (Park (2000)). In the cases where the firm controls the bank, the firm may force the bank to finance risky investments, leading to an increase in the bank's risk exposure. In this paper, we consider the role of lender identity and compare the impact on loan pricing of different types of lenders. We expect the integration of banking and commerce to affect loan pricing differently between domestic and foreign lender groups as foreign lenders may lack the advantage of close equity and lending relationships with borrowers relative to domestic lenders. Given potential higher information costs, foreign lenders may charge higher loan spreads as compensation for their risk exposure. In this paper, we test two hypotheses related to banking-commerce integration which are as follows.

Hypothesis 1: The variable 'Non-financial firms owning bank shares' will have a different impact on loan pricing depending on the identity of the lender group. We expect the variable to be negatively associated with loan pricing in the domestic lender sample (as discussed above) and positively associated with loan pricing in foreign lender sample.

Hypothesis 2: 'Bank owning non-financial firms' examines the equity link from the opposite direction. Consistent with the first hypothesis, we expect it to be negatively

associated with loan pricing in domestic lender sample and positive in foreign lender sample.

Banking concentration

This paper employs two measures of banking concentration which are also obtained from the World Bank survey.

1). Concentration of assets measures the fraction of assets held by the five largest commercial banks in borrower countries.

2). Concentration of deposits measures the fraction of deposits held by the five largest commercial banks in borrower countries.

Banking concentration in terms of assets varies across economies, ranging from 0.2 (Germany) to 0.995 (Finland) in our sample. It is important to point out that the banking concentration level should not be viewed as an indicator of financial development. For example, the U.S and the U.K. have concentration levels of 0.3 and 0.23, respectively. Peru and Mexico have concentration levels (in terms of assets) of 0.83 and 0.80, respectively. For robustness, we employ the two alternative banking concentration measures noted above in our empirical tests.

In the literature, some studies argue that high banking concentration might lead to increased price collusion and monopoly rents in banking, a view embodied in the market-power theory. Banks with greater market power tend to charge higher interest rates (Berger (1995)). If banks particularly familiar with the local economy have a comparative advantage in generating borrower information, they might use this

advantage to extract rents from borrowers.[7] Accordingly, domestic lenders are expected to extract higher loan spreads in countries with high banking concentration. On the other hand, foreign lenders may provide favorable loan contacts terms to attract borrowers as a way to enter the banking sector since the presence of high banking concentration places tougher barriers of entry for foreign financial institutions. In contrast, the efficient-structure theory suggests that banking concentration increases overall banking efficiency. Instead of extracting monopoly rents, banks price their services more competitively. With the presence of foreign entrants in the banking sector, there is fierce competition between domestic and foreign lenders, producing competitive behavior and pricing. The market discipline resulting from the presence of foreign lenders is expected to be incorporated in loan pricing. Thus, according to the efficient-structure theory, both domestic and foreign lenders would provide competitive loan pricing.

We hypothesize that, in countries with high banking concentration, domestic lenders exercise greater market power and charge monopoly rents; foreign lenders provide more competitive pricing in order to attract borrowers. The following are two testable hypotheses related to banking concentration.

Hypothesis 3: 'Concentration of assets' has different impacts on loan pricing between domestic and foreign lender groups. We hypothesize that it is positively related to loan pricing in the domestic lender sample and negatively related to loan pricing in the foreign lender sample.

Hypothesis 4: 'Concentration of deposits' has different impacts on loan pricing between domestic and foreign lender groups. It is positively related to loan pricing in the

[7] Alternatively, a positive relationship between loan costs and banking concentration may indicate that firms with lower quality might have access to credits in a more concentrated market as suggested by Peterson and Rajan (1995). The higher loan costs may not necessarily suggest bank collusion.

domestic lender sample and negatively related to loan pricing in the foreign lender sample.

To assess the impacts of bank regulation and supervision on loan pricing, we add host countries' banking-commerce integration and banking concentration variables to the base model specified below, and examine how the addition of these variables affects loan pricing.

The base specification

The base model specification includes host countries' primary legal and institutional variables which are widely used in prior studies (Qian and Strahan (2005), and Esty (2004), among others). Thus, in order to assess the effects of banking-commerce integration and banking concentration on loan pricing, we first need to account for the influence of legal and institutional variables.

In the examination of loan pricing, we also account for borrower-level risk to the best of our ability given the data constraints of *Dealscan*. It is very difficult to obtain borrowers' financial information consistently across all 49 countries in our sample. Hence, we control for borrower risk by including Moody's debt ratings of their senior debt, with unrated firms constituting the omitted category, and a set of 1-digit indicator variables to control for their industry affiliations.[8] In addition, we control for the natural logarithm of the loan facility size in millions of dollars, which somewhat accounts for borrower size. We also control for several other loan specific variables which are discussed below.

[8] A caveat here is that firm-level variables may affect other loan contract terms besides loan pricing and there may be potential interrelationships among these loan contract terms (see Dennis, Nandy, and Sharpe (2000)), explicit modeling of which is beyond the scope of this study.

The legal and institutional variables and other control variables used in this study are described in detail as follows:

- Three legal origin dummy variables. We include three legal-origin indicator variables in the regressions, Scandinavian-origin, French-origin, and German-origin (La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998))(hereafter LLSV)). English origin is the omitted group in this study.
- Private credit. It is a financial sector development variable, calculated as the value of credits by financial intermediaries to the private sector divided by GDP (Beck, Demirguc-Kunt and Levine (2000)). Private credit is a broad measure of the development of financial intermediaries, widely used in prior studies (Levine and Zervos (1998), Beck *et al*. (2003), Levine *et al*.(2000), and Esty (2004), etc). In this paper, we employ Private Credit to measure the depth of a country's financial development.
- Rule of Law is an assessment of the law and order tradition in the country produced by the country risk rating agency International Country Risk (ICR). Measured as an average of the months of April and October of the monthly index between 1982 and 1995, it is scaled from zero to 10, with lower scores for a weaker tradition for law and order (LLSV (1997)).
- Creditor Rights. An index of creditor rights introduced by LLSV. The index is formed by adding 1 when: 1) the country imposes restrictions, such as creditors' consent or minimum dividends, to file for reorganization; 2) secured creditors are able to gain possession of their security once a reorganization petition has been approved (no automatic stay); 3) the debtor does not retain the administration of

its property pending the resolution of the reorganization; 4) secured creditors are ranked first in the distribution of the proceeds that result from the disposition of the assets of a bankrupt firm. The index ranges from 0 to 4 (LLSV 1997, 1998). A higher value indicates stronger Creditor Rights.

- Three dummy variables are included to control for loan purposes. The dummy variable, Recapitalization, equals 1 if the loan purposes are Debt repayment, Debtor-in-possession, or Recapitalization; Acquisition equals 1 if loan purposes are Acquisition lines, LBO/MBO, or Takeover; the dummy variable, general purpose is 1 if loan purposes are Corporate Purposes or Working Capital; Other loan purpose are included in miscellaneous. In this study, general purpose is the omitted group. The loan purposes could influence lenders' decisions on some loan contract terms as some projects are inherently riskier than others.
- A dummy variable which equals 1 if the loan type is line of credit. Otherwise, it is zero. A line of credit facility provides an ongoing line of credit that may be drawn down, repaid and re-borrowed many times over the life of the facility. A line of credit facility is more likely to be associated with quantity risk (Ho and Saunders (1983)) as the expected size of the loan to be drawn down is often variable depending on the borrower's future circumstances. This quantity risk (amount of loan drawn down) would therefore affect the determination of loan spreads.
- A syndicated loan dummy variable. The data set in this study includes both syndicated loans and non-syndicated loans. Syndicated loans typically are

associated with lower loan costs relative to non-syndicated loans due to the risk diversification inherent in large syndicates.

- A covenant dummy variable which equals 1 if the loan facility have any type of covenants. The inclusion of covenants in a loan facility requires the borrower to release detailed financial and/or accounting information to the lender(s) on a regular basis which may affect the loan price.
- Six dummy variables to control borrower-level risk. Based on Moody's credit ratings of borrower's senior debt, we create 7 rating indicators, AAA, AA, A, BBB, BB, B, and NR. The rating indicator, B equals 1 if borrowers have credit ratings B or worse. The variable, NR is 1 if borrowers have no credit rating. In our test, NR is the omitted group.
- Nine dummy variables of borrowers' industry SIC codes. We create 10 dummy variables to control for the industry affiliation of borrowers based on the SIC classification.
- The natural logarithm of the tranche amount expressed in dollars. Large loans may have lower loan prices by virtue of the fact that large loans are secured by large companies- a group likely to be associated with less information asymmetry.
- A variable representing the number of lenders measured as the natural logarithm of the number of lenders for each loan facility. The number of lenders impacts the determination of loan pricing for the reasons of risk-diversification, the complication of restructuring and renegotiation processes, and free-rider problems (Hao and Roberts (2005)).

All the regression specifications in this paper, including the base specification includes year fixed effects (1989-2004). Including year fixed effects allows us to absorb effects of inflation and business cycles as well as any other omitted variable that shifts over time.

To differentiate lenders into the domestic and foreign category, we require information about lender and borrower location. For the purpose of this study, we define a lender as foreign if the lender's headquarter country is different from the borrower country. A loan facility is included in the foreign lender sample if all lenders associated with the loan are not from the borrower's country; it is in the domestic lender sample if all lenders are from the borrower country.[9] For syndicated loans, lead lenders' locations are used for identifying the lender category.

3. The data

Our loan data source is the *DealScan* database, which is supplied by the Loan Pricing Corporation (LPC).[10] The *DealScan* database includes borrower identity and location; lender identity and location, lender shares and lender roles; loan purpose, type, amount and contract date; and price, as well as a number of non-price loan contract terms. In *DealScan*, some of the "deals" involve more than one loan "facility" originated by the same borrower. In this study, we conduct our analysis at the facility-level, treating each loan facility as a separate loan. This is because deals with multiple lenders do not always involve the same group of lenders in all facilities.

[9] We exclude the mixed lender group in which some of the lenders are from the borrower's country and other lenders are not. Only domestic and foreign lender groups are included for the reason of comparison. Results for the mixed lender category are however available to interested readers upon request.

[10] Other studies using DealScan for various research purposes include Carey, Post, and Sharpe (1998), Dennis and Mullineaux (1998), Dennis, Nandy and Sharpe (2000), Hubbard, Kuttner, and Palia (2002).

We use loan data for the period January 1989 to April 2004. To assess the impacts of host countries' banking regulation and supervision practices on loan pricing, we need to control for the effects of legal and institutional characteristics. We use the borrower country recorded in the *DealScan* database and link it to 49 countries' legal and institutional characteristics used in LLSV (1997 and 1998), Levine (1998), and Demirguc-Kunt and Levine (2001).[11] In doing so, we get 92,120 loan facilities in total across 49 countries. To identity foreign and domestic lenders, we use information in *DealScan* identifying borrower and lender country. This study examines the determinants of loan pricing so information on loan price is required for each loan observation. A large number of observations are excluded due to missing data on lender country, borrower country, and loan price. Our final data set contains 54,279 loan facilities covering 49 countries.

[Table 1 here]

Table 1 shows the summary statistics of loan pricing across 49 countries. In our empirical testing, the dependent variable is the natural logarithm of loan price for each loan facility. Loan price is measured in basis points by the all-in-spread drawn over the benchmark London Interbank Offering Rate (LIBOR). In *DealScan*, all-in-spread drawn is expressed as a spread over LIBOR which takes into account both one-time and recurring fees associated with the loan.[12] As shown in Table 1, there are 45,149 U.S.

[11]There are some potential limitations with the variables used to capture host countries' legal and institutional characteristics which are widely used in the literature. For example, the index of creditor rights is at a single date based on legal rules protecting against expropriation. In this study, our data sample covers from 1989 to 2004. We are unable to fully control for some of the country-level variables' alteration over the time.

[12] In *Dealscan*, the all-in-spread drawn is defined as the coupon spread, plus any annual fee, plus any up-front fee divided by the maturity of the loan. For loans not based on LIBOR, the LPC converts the coupon spread into LIBOR terms by adding or subtracting a constant differential reflecting the historical averages of the relevant spreads.

loan facilities in our sample (83% of the whole data sample). To control for any bias introduced by this unbalanced sample, we add a U.S. dummy variable in our empirical tests.

[Table 2 here]

The definitions of the primary variables are provided in Table 2. There are three sets of variables: legal and institutional, bank regulation and supervision, and loan –level variables. As discussed earlier, in the empirical tests, we add the loan variables as control variables to account for their effects on loan pricing, and to control for borrower-level risk, we include borrower credit rating and the SIC dummy variables.

[Table 3 here]

Table 3 shows the primary legal, institutional, and banking regulation and supervision proxies across 49 countries. It is clear that these country-level variables vary considerably across economies. For example, private credit which is a measure of financial sector development ranges from 0.073 (Zimbabwe) to 1.687 (Switzerland). Rule of Law, an assessment of the law and order tradition in the country, varies from 1.9 (Sri Lanka) to 10 (Switzerland and U.S.) with higher scores on Rule of Law indicating greater tradition for law and order. As for Creditor Rights, Mexico has the lowest rank (0) and the U. K. has the highest rank (4). Further, a measure of banking concentration defined as the fraction of deposits held by the five largest banks in a given country varies from 0.21 (Germany) to Finland (0.997). We expect that difference in those country-level variables play an important role in determining loan pricing.

[Table 4 here]

The correlation matrix of selected primary explanatory variables is presented in Table 4. It indicates some simple relationships. The results show that higher concentration and closer lender-borrower relationships (more direct equity links between banks and firms) are associated with lower loan price. In addition, the correlations show that better institutions (more developed financial sector, greater creditor rights) are negatively related to loan pricing. To detect multicollinearity, we compute variance inflation factors (VIF).[13]

4. Empirical results

4.1 Banking-commerce integration

In this section, we discuss the main regression results. We add the measures of banking-commerce integration and banking concentration to the base specification model and examine the impacts of those variables on loan pricing among different data samples: domestic lender, foreign lender, and full sample. For each testable hypothesis, we report the results of including variables related to that hypothesis and provide our explanations.

[Table 5 here]

Table 5 presents the results of the impacts of banking-commerce integration variables on loan pricing. There are 8 regressions in Table 5. Regression 1 and 2 are the base models for domestic and foreign lender groups, respectively. We add two proxies of

[13] A general rule is that the VIF should not exceed 10 (Belsley, Kuh, and Welsch, 1980). We use each legal, financial, and bank regulation explanatory variable as the dependent variable to run a regression and obtain the R^2 and VIF. None of the VIFs exceeds 10.

banking-commerce integration (non-financial firms owning bank shares and banks owning non-financial firms) in regressions 3-6. The results for the full data sample are reported in regression 7 and 8.

The variable, non-financial firms owning bank shares, measures restrictions on the ability of non-financial firms to own and control banks.[14] As stated in hypothesis 1, we expect a negative relationship between this variable and loan pricing in domestic lender sample but a positive relationship in foreign lender sample. The results show that the coefficient of this variable is insignificant in regressions 3 and 4 in Table 5. Therefore, we cannot draw conclusions that this variable has different impacts on loan pricing between domestic and foreign lender groups. The results are not supportive of hypothesis 1.

Another proxy of banking-commerce integration, bank owning non-financial firms, has significantly different impacts on loan pricing between domestic and foreign lender groups.[15] As shown in Table 5, the coefficient of this variable is significantly negative in regression 5 for the domestic lender group, which suggests that borrowers pay lower loan rents to domestic lenders in countries where restrictions on banks owning non-financial firms are less stringent. In other words, domestic lenders charge lower spreads to borrowers given close banks' equity links and control over non-financial firms. The results are consistent with the argument that the direct equity links and close lending relationships developed between banks and firms provide lenders with incentives to become more informed and facilitate information transference between lenders and

[14] This variable, non-financial firms owning bank shares, has three classifications: unrestricted, permitted, and restricted. In the empirical test, we assign numerical numbers 2, 1, and 0 to unrestricted, permitted, and restricted, respectively.

[15] "Bank owning non-financial firms" takes on four values: unrestricted (3), permitted (2), restricted (1), and prohibited (0).

borrowers. Lenders with equity holdings in firms can exercise monitoring more effectively and efficiently, which leads to reduced contracting costs. The negative coefficient of this variable in regression 5 lends support to our second hypothesis.

Moreover, this variable has a significantly positive impact on loan pricing in regression 6 for the foreign lender group. The result is also consistent with our hypothesis 2. Relative to domestic lenders, foreign lenders are less likely to be familiar with the local economy and have comparative advantages in generating borrower information. The problem of information asymmetry is severe and thus information costs are relatively high for foreign lenders. Relative to their domestic counterparts, foreign lenders must put forth greater effort to effectively monitor borrowers. This is consistent with findings in Qian and Strahan (2005) that, in the cases where domestic lender participation is less, foreign lenders charge higher loan rents due to lack of information advantages relative to domestic lenders. Further, foreign lenders might extract higher loan rents on borrowers who have equity relationships with other financial institutions, which may increase the riskiness of the firm. Considering the potential increase in borrower risk, foreign lenders exercise greater monitoring and extract higher loan rents to compensate their greater risk exposure and the higher cost of distorted risk-taking incentives by borrowers. The positive coefficient of bank owning non-financial firms is thus consistent with our expectation.

The results in regression 7 and 8 show the impacts of banking-commerce integration on loan pricing in the full data sample. The coefficient of 'non-financial firms owning bank shares' is insignificant in regression 7; the coefficient of 'bank owning non-financial firms' is significantly positive in regression 8. Comparing the impacts of 'bank

own non-financial firms' in domestic and foreign lender groups, (regression 5 and 6), we can perceive the different impacts of this variable on loan pricing between different lender groups. The evidence suggests that the results on banking-commerce integration in the full sample may be driven by the foreign lender group. As mentioned earlier, one of the major contributions of this paper is that it shows the different impacts of banking-commerce integration on loan pricing between domestic and foreign lender groups.

Table 5 also shows the different impacts that certain other variables have between the domestic and foreign lender groups. Private Credit has different impacts as shown in regression 3-6. In countries with more developed financial sectors (higher scores), firms have more access to various financing means and superior financial services provided by lenders. The presence of foreign lenders facilitates lender competition and leads to lower financing costs. Firms may choose to borrow from foreign lenders for attractive contract terms, such as lower loan costs. This explains the negative coefficients of Private Credit in regression 4 and 6. In contrast, for other country-level variables, the legal-origin variables, Rule of Law, and Creditor Rights have similar impacts on loan pricing between domestic and foreign lender groups. For example, Rule of Law and Creditor Rights are negatively related to the setting of loan price in both domestic and foreign lender groups, similar to that in Qian and Strahan(2005). As shown in Table 5, most of the loan variables have similar influence on loan pricing except the number of lenders.

The log of lender number is positively related to loan pricing in the domestic lender group in regression 3 and 5, which may be due to the complication of setting up loan contracts and potential ineffective monitoring in the presence of more domestic

lenders. It is negatively related to loan pricing in the foreign lender group, which may be a result of more effective risk diversification. As shown in Table 5, the coefficient of the U.S. dummy variable is significant in all regressions except regression 5. This indicates the necessity of including such a dummy variable to control for our unbalanced data sample. We explore this issue more rigorously later in the robustness section.

4.2 Banking concentration

We next turn to the results of employing banking concentration variables reported in Table 6.

[Table 6 here]

Regression 1 and 2 are the base model for domestic and foreign lender groups, respectively. In regression 3 and 4, we add a proxy of banking concentration which is measured by the fraction of assets held by the five largest banks. The variable, concentration of assets, has no significant effect on loan pricing in regression 3 for the domestic lender group while the coefficient is significantly negative in regression 4 for the foreign lender group. The negative coefficient in regression 4 suggests that foreign lenders tend to extract lower rents in countries with high levels of banking concentration. The results are consistent with our hypothesis 3. Given high banking concentration in host countries, foreign lenders need to provide more attractive contracts to attract borrowers and compete with domestic lenders as per the market-power theory. As for domestic lenders, we expect that domestic lenders would extract monopoly rents from

borrowers given their favorable positions. In regression 3, however, the coefficient of concentration of assets is insignificant, which does not support the market-power theory.

An alternative concentration proxy, concentration of deposit, is measured by the fraction of deposits held by the five largest commercial banks at year end 2001. This variable is included in regression 5 and 6. The results are qualitatively similar to those in regression 3 and 4. The negative coefficient of this variable in regression 6 supports our previous arguments. Foreign lenders tend to charge less in countries with higher banking concentration and the presence of foreign entrants leads to more competition and efficiency of the markets.

The results in regression 3-6 suggest that banking concentration has different impacts on the lending behavior of domestic and foreign lenders. Comparing the results from the regressions in domestic and foreign lender groups with those in full sample, the evidence further demonstrates the importance of separating foreign and domestic lenders in the study of international loan pricing.

[Table 7 here]

Table 7 shows the results including two banking-commerce integration and banking concentration variables, 'Bank Own Non-financial firms' and 'concentration of assets'. As shown in Table 7, 'Bank Own Non-financial firms' has a significantly negative impact on loan spreads in regression 3 for the domestic lender group and a significant positive impact in regression 4 for the foreign lender group. The results are consistent with our views of closer lender-borrower relationships and asymmetric information as discussed earlier. The coefficient of 'concentration of assets' is

insignificant in regression 3 while it is significantly negative in regression 4 for foreign lender group. This variable has the same significance level and signs compared to regressions 3 and 4 in Table 6.

The results in Table 7 suggest that banking-commerce integration and banking concentration play a role in the determination of loan pricing, which is, to some extent, contrary to the findings in DLL (2004) in which they examine the impacts of banking concentration on bank operational performance. DLL (2004) suggest that, after accounting for economic freedom or property rights protection, banking concentration does not explain cross-bank performance in terms of banks' net interest margins and overhead costs by using *bank-level* data. On the other hand, we employ *loan-level* data to examine the impact of bank regulations on loan pricing after controlling for other legal and institutional variables (e.g., legal origins, Creditor Rights, Private Credit, and Rule of Law). Different from DLL (2004), this paper aims to examine the determination of loan pricing not banks' operational performance (measured by bank net interest margins and overhead costs). The results of regressions 3 and 4 in Table 7 shed light on the importance of bank regulations in the determination of loan prices.

Moreover, we further analyze the impacts of bank regulation and supervision on loan pricing by examining the joint effects of banking-commerce integration and banking concentration as shown in regressions 5 and 6 in Table 7. We aim to capture the non-linear relationships between bank regulation and supervision and loan pricing. To conduct the test, we create a new variable, High concentration dummy, equal to 1 when host country's 'concentration of assets" is greater or equal to 0.7 and zero otherwise. We

include an interaction term which is the product of 'Bank Own Non-financial Firms' and the new concentration dummy variable.

The results of 'Bank Own Non-financial Firms' in regressions 5 and 6 are consistent with those in regressions 3 and 4. The coefficient of high concentration dummy variable is significantly negative in the regression of foreign lender group, suggesting that foreign lenders extract lower loan rates as a way to attract borrowers in highly concentrated banking environments. The coefficient of the interaction term is significantly positive in domestic lender regression and insignificant in foreign lender regression. It indicates that the advantageous effects of 'Bank Own Non-financial Firms' on loan pricing in domestic lender group is decreasing given high levels of banking concentration in host countries. One possible explanation is that the increased loan availability and lower loan cost in concentrated banking areas reduces the competitive advantage of the equity links between the bank and the firm. In prior studies, Peterson and Rajan (1995) point out that higher loan availability and lower loan cost are available for the new and small firms in concentrated banking areas in the U.S. Moreover, Cao and Shi (2001) suggest that, with low screening costs, loan availability and loan prices are more favorable to borrowers in a concentrated market. Following this line of reasoning, in countries with high banking concentration, we expect that domestic lenders charge low loan rents and provide higher loan availability in order to obtain future surpluses from the borrowers, which is in line with Peterson and Rajan's (1995) argument. Further, the direct equity link between the bank and the firm would lead to lower screen cost. Consequently, higher loan availability and lower loan costs are expected in concentrated markets as suggested by Cao and Shi (2001). Accordingly, direct equity relationships

between the bank and the firm lead to lower loan costs while such benefits are offset by the presence of higher loan availability and lower loan costs associated with high banking concentration. As shown in regression 5, the favorable effects of equity link between the bank and the firm on loan pricing vanish in countries with high banking concentration (as the magnitude of the coefficient of the interaction term surpasses that of the coefficient of 'Bank Own Non-financial Firms'). Overall, the results in regression 5 point out the joint effects of banking-commerce integration and banking concentration on loan pricing and corroborate that bank regulation and supervision matter for the determination of loan pricing.

4.3 Robustness Issues

Here, we provide and discuss the results of two main robustness checks. First, we confirm our empirical results on the influence of banking-commerce integration and banking concentration on loan pricing by excluding the U.S. observations. This is important because, in our sample, U.S. observations outweigh that of all other countries. The full data sample in this study contains 54,279 loan observations across 49 countries while the U.S. has 45,149 loan observations (83 % of the full data sample). We rerun our tests excluding the U.S. data to check the robustness of our results in Table 5 and 6 in which the coefficients of the U.S. indicator are statistically significant. Table 8 shows the new regression results.

[Table 8 here]

Table 8 confirms our original assessment of the impact of banking regulation and supervision on loan pricing and shows that no bias is introduced by the unbalanced sample across countries. The direct equity links and the close relationships built between the bank and the firm reduce agency costs and lowers loan costs. As shown in Table 8, the coefficient of 'Non-financial firms owning bank shares' in regression 1 becomes significantly negative compared to its lack of significance in regression 3 in Table 5. It suggests that banking-commerce integration plays a more important role in the design of loan prices in most countries than the U.S. The coefficients of 'bank own non-financial firms' that achieve significance in regressions 5 and 6 in Table 5 have same signs in regressions 3 and 4 in Table 8. Domestic lenders charge lower rents because of mutual equity ownership and a close lender-borrower relationship between the lender and the firm; foreign lenders tend to extract higher loan rents due to higher information costs and increased monitoring efforts. Moreover, in countries with high banking concentration (measured by concentration of assets and concentration of deposits), foreign lenders extract lower loan rents as shown in regressions 6 and 8 in Table 8.

[Table 9 here]

We also employ the bootstrap approach to address the problem of unbalanced sample size and examine whether the regression results are biased by the sample size. Using the bootstrap technique, we obtain the repeated samples of the available Non-U.S. domestic and foreign lender data sets and match the repeated sample sizes to those of domestic and foreign lender data sets with the U.S. data. Then we compare the regression results from the bootstrapped data samples with the results of comparable

regressions 3-6 reported in Table 5 and 6. The results on the impacts of bank regulation and supervision on loan pricing are qualitatively unchanged. As shown in Table 9, all the coefficients of bank regulation and supervision variables that achieve significance have the same signs in regressions 3-6 in Table 5 and Table 6.

[Table 10 here]

Second, we check the robustness of our empirical results by adding the other loan contract terms to account for the interrelationships among those contract terms and their effects on loan pricing. The results are reported in Table 10. Here, we include two variables, Ln (maturity) and secured dummy. Ln (maturity) is defined as the natural logarithm of a loan facility's maturity (in years). The secured dummy variable included here is a predicted security variable. In the full data sample, many loan observations have missing secured status. We employ an instrumental variable type approach to interpolate the missing values. In the first stage we run a logistic regression of secured status on various firm and loan specific characteristics. Specifically, we include the borrower's credit rating and industry classification to proxy for its credit risk.[16] In addition we also include different loan characteristics such as loan size and loan purposes as additional independent variables. From this logit regression, we do both an in- and out-of-sample prediction of the probability of the loan being secured for our entire sample. We then employ this "predicted secured" as an additional regressor in our other estimations.[17] Table 10 findings confirm our original findings, the important influences

[16] While a richer estimation should include other firm specific characteristics such as firm size, market to book ratio, abnormal earnings, etc., we are restricted in using such variables due to the limited scope of *DealScan* in providing data for such firm specific characteristics.

[17] Note that unlike secured status which is a binary dummy variable, predicted secured is a continuous variable between zero and one.

of host countries' banking-commerce integration and banking concentration on the setting of loan pricing. The coefficients of banking-commerce integration and banking concentration variables that gain significance in regressions 3-6 in Table 5 and 6 have the same signs in Table 10. Moreover, the results in Table 10 demonstrate that those banking regulation and supervision variables have diverse impacts on the lending of different types of lenders (domestic vs. foreign).

5. Conclusion

This paper presents evidence on the ways in which differences in countries bank regulation and supervision practices impact loan pricing, how the impacts differ between domestic and foreign lender groups, and highlights the importance of bank regulations for financial outcomes using *loan-level* data. We find that host countries' banking-commerce integration and banking concentration are important determinants of loan pricing, along with legal and institutional characteristics. Moreover, lender identity (domestic vs. foreign) plays an important role in the determination of loan pricing. For example, in countries with close direct equity links between the bank and the firm, domestic lenders tend to charge borrowers less given the direct equity links and lending relationships between banks and firms, while foreign lenders extract higher loan rents to compensate their exposure to borrowers' risk as information costs are higher for foreign lenders. Moreover, the favorable effects of equity link between the bank and the firm on loan pricing in domestic lender group vanish in countries with high banking concentration. We also find that banking-commerce integration plays a more important

role in determining loan prices in countries other than the U.S. where the direct equity links between the bank and the firm are relatively somewhat restricted.

Furthermore, we provide evidence that banking concentration impacts loan pricing. In countries with higher banking concentration, foreign lenders tend to provide more favorable contract terms to attract borrowers. The presence of foreign lenders facilitates competition and leads to lower financing costs for borrowers. In the banking literature, there are two contrasting theories regarding the impacts of banking concentration; the market-power theory and the efficient-structure theory. Our results are not supportive of the view embodied in the market-power theory that high banking concentration lead to increased price collusion and monopoly rents in banking.

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Table 1: Summary statistics of loan pricing across country

This table shows some summary statistics of loan pricing across 49 countries in our data sample. Loan price is obtained from the DealScan database and is measured in basis points by the all-in-spread drawn over the benchmark London Interbank Offering Rate (LIBOR). In the DealScan database, all-in-spread drawn is expressed as a spread over LIBOR which takes into account both one-time and recurring fees associated with the loan. The all-in-spread drawn is thus defined as the coupon spread, plus any annual fee, plus any up-front fee divided by the maturity of the loan.

Borrower Country	N	Mean	Median	Std Dev
Argentina	227	233.39	200.00	147.40
Australia	121	105.96	90.00	102.30
Austria	16	137.50	107.50	92.25
Belgium	86	120.97	85.00	108.27
Brazil	178	264.24	243.75	146.38
Canada	934	181.75	163.50	134.68
Chile	166	112.18	65.00	107.37
Colombia	98	233.25	200.00	131.32
Denmark	46	105.89	35.00	150.08
Ecuador	2	312.50	312.50	229.81
Egypt	29	119.10	75.00	75.84
Finland	132	78.75	38.75	90.57
France	694	133.23	100.00	128.33
Germany	385	168.64	175.00	167.76
Greece	134	79.91	55.00	61.75
Hong Kong	279	113.14	95.00	74.64
India	121	99.03	75.00	101.18
Indonesia	102	157.55	150.00	69.97
Ireland	111	131.55	87.50	147.05
Israel	28	61.48	45.00	56.76
Italy	381	104.67	57.50	93.58
Japan	52	87.15	61.25	89.43
Jordan	1	225.00	225.00	.
Kenya	2	435.00	435.00	0.00
Malaysia	31	131.53	120.00	91.83
Mexico	324	220.98	200.00	140.61
Netherland	359	146.73	112.50	129.96
New Zealand	17	102.12	47.50	138.32
Nigeria	3	225.00	300.00	184.32
Norway	228	76.23	35.00	80.66
Pakistan	30	94.57	100.00	52.14
Peru	36	243.88	229.00	132.64
Philippines	34	148.28	131.25	90.22
Portugal	70	75.15	38.75	75.17
Singapore	36	128.43	113.75	57.30
South Africa	103	77.01	55.00	64.29
South Korea	100	80.80	62.50	61.67
Spain	424	103.45	75.00	92.61
Sri Lanka	2	85.00	85.00	0.00
Sweden	230	72.57	40.00	77.04
Switzerland	166	104.00	61.25	94.71
Taiwan	46	85.48	65.00	64.43
Thailand	97	105.57	87.50	67.30
Turkey	297	113.30	85.00	141.56
USA	45149	216.62	225.00	133.36
United Kingdom	2094	123.40	100.00	104.08
Uruguay	12	173.75	142.50	110.93
Venezuela	58	198.91	200.00	113.73
Zimbabwe	8	82.97	86.25	27.45
Full sample	54279	202.93	200.00	135.09

Table 2
Definitions of key dependent and independent variables

Three legal origin dummy variables are from LLSV (1998). English origin dummy variable is the omitted group in this study. Private credit is from Beck, Demirguc-Kunt and Levine (2000). Rule of Law and Creditor Rights both are from LLSV (1997, 1998). The banking regulation and supervision variables are all from a World Bank's survey on bank regulation and supervision across 107 countries. The data is updated to 2003. We use the loan purposes recorded in DealScan database to create four loan purpose dummy variables.

Legal and Institution variables	
Scandinavian Origin Dummy	A dummy variable which equals 1(0 otherwise) if the country is Scandinavian legal origin.
French Origin Dummy	A dummy variable which equals 1(0 otherwise) if the country is French legal origin.
German Origin Dummy	A dummy variable which equals 1(0 otherwise) if the country is German legal origin.
Private Credit	It is calculated as the value of credits by financial intermediaries to the private sector divided by GDP.
Rule of Law	It scales from zero to six, with lower scores for less tradition for law and order.
Creditor Rights	It measures a borrower country's overall creditor rights, ranging from zero to four.
Bank Regulation and Supervision variables	
Non-financial firms owning bank share	It measures restrictions on the abilities of non-financial firms to own and control banks.
Bank Own Non-financial Firms	It measures restrictions on the abilities of banks to own and control non-financial firms.
Concentration on Assets	It measures the fraction of assets held by the five largest commercial banks in borrower countries
Concentration on Deposits	It measures the fractions of deposits held by the five largest commercial banks in borrower countries.
Loan variables	
Recapitalization	Dummy variable equal to 1 (0 otherwise) if the loan purpose is Debt repay. or Debtor-in-poss. or Recap
Acquisition	Dummy variable equal to 1 (0 otherwise) if the loan purpose is Acquis. Line or LBO/MBO or Takeover
Miscellaneous	Dummy variable equal to 1 (0 otherwise) if the loan purpose is not included in General purpose, Recapitalization, and Acquisition
Line of credit Dummy	Dummy variable equal to 1 (0 otherwise) if the loan type is line of credit.
Syndicated Dummy	Dummy variable equal to 1 (0 otherwise) if the loan is a syndicated loan.
Ln (facility size in millions)	Natural logarithm of the amount term facility size
Ln (lender number)	Natural logarithm of the number of lenders
Covenant dummy	Dummy variable equal to 1 (0 otherwise) if the loan has any types of covenant.
Ln (Loan price)	Loan price is Rates all-in-spread drawn (in the DealScan database), defined as the basis point coupon spread over LIBOR plus the annual fee and plus the upfront fee spread over the duration of the revolver

Table 3
Brief description of legal, financial and banking variables

The legal origin variable is following that in LLSV (1997, 1998). Private credit is a measure of host countries' financial sector development, calculated as the value of credits by financial intermediaries to the private sector divided by GDP. Rule of Law is an assessment of the law and order tradition in host countries. Creditor Rights is a measure of host countries' basic legal protections against borrower expropriation. Both Rule of Law and Creditor Rights are from LLSV(1998). Banks owning non-financial firms measures restrictions on the abilities of banks to own and control non-financial firms. Non-financial firms owning banks measures restrictions on the abilities of non-financial firms to own and control banks. Concentration of assets measures the fraction of assets held by the five largest commercial banks in borrower countries. Concentration of deposits measures the fractions of deposits held by the five largest commercial banks in borrower countries. These four banking regulation and supervision variables are all from a survey conducted by the World Bank.

Country	Legal Origin	Private Credit	Rule of Law	Creditor Rights	Bank owning non-financial firms	Non-financial firms own bank shares	Concentration on assets	Concentration on deposit
Argentina	French	0.2457	5.35	1	Restricted	Permitted	0.499	0.495
Australia	English	0.514	10	1	Permitted	Permitted	0.76	0.74
Austria	German	0.9859	10	3	Permitted	Permitted	.	.
Belgium	French	0.756	10	2	Permitted	Permitted	0.88	0.87
Brazil	French	0.2716	6.32	1	Unrestricted	Unrestricted	0.536	0.629
Canada	English	0.6603	10	1	Permitted	Restricted	0.8	0.874
Chile	French	0.6263	7.02	2	Prohibited	Permitted	0.608	0.617
Colombia	French	.	2.08	0	Restricted	Permitted	0.41	0.41
Denmark	Scandinavian	0.3406	10	3	Restricted	Permitted	0.9	0.805
Ecuador	French	.	6.67	4	Prohibited	Permitted	0.7	0.7
Egypt	French	0.4863	4.17	4	Restricted	Permitted	0.618	0.631
Finland	Scandinavian	0.5081	10	1	Permitted	Permitted	0.995	0.997
France	French	0.8201	8.98	0	Permitted	Unrestricted	0.6	0.7
Germany	German	1.1396	9.23	3	Permitted	Permitted	0.2	0.21
Greece	French	0.26	6.18	1	Permitted	Unrestricted	0.739	0.762
Hong Kong	English	.	8.22	4	Permitted	Restricted	0.42	0.58
India	English	0.2248	4.17	4	Restricted	Restricted	0.4353	0.4096
Indonesia	French	0.3363	3.98	4			.	.
Ireland	English	0.5047	7.8	1	Permitted	Permitted	.	.
Israel	English	0.7741	4.82	4	Restricted	Restricted	0.934	0.892
Italy	French	0.572	8.33	2	Permitted	Restricted	0.512	0.522
Japan	German	1.1641	8.98	2	Restricted	Permitted	0.464	0.457
Jordan	French	0.7106	4.35	.	Restricted	Permitted	0.619	0.673
Kenya	English	0.3082	5.42	4	Restricted	Restricted	0.6	0.6
Malaysia	English	0.9656	6.78	4	Restricted	Restricted	0.557	0.571
Mexico	French	0.1305	5.35	0	Restricted	Restricted	0.8018	0.8032
Netherlands	French	1.0599	10	2	Unrestricted	Permitted	0.881	0.907
New Zealand	English	0.9442	10	3	Unrestricted	Unrestricted	0.856	0.847
Nigeria	English	0.1061	2.73	4	Restricted	Permitted	0.411	0.4299
Norway	Scandinavian	0.6146	10	2	Permitted	Restricted	0.84	0.86
Pakistan	English	.	3.03	4	Restricted	Permitted	0.6471	0.6901
Peru	French	0.2708	2.5	0	Permitted	Permitted	0.825	0.8506
Philippines	French	0.4251	2.73	0	Permitted	Restricted	0.4298	0.4594
Portugal	French	0.9209	8.68	1	Restricted	Permitted	0.796	0.79
Singapore	English	1.0605	8.57	3	Prohibited	Permitted	.	.
South Africa	English	0.6634	4.42	4	Permitted	Permitted	0.752	0.773
South Korea	German	0.7256	5.35	3	Restricted	Permitted	0.701	0.698
Spain	French	0.8587	7.8	2	Unrestricted	Permitted	0.532	0.437
Sri Lanka	English	0.2323	1.9	3	Restricted	Restricted	.	.
Sweden	Scandinavian	0.411	10	2	Unrestricted	Permitted	0.62	0.9
Switzerland	German	1.687	10	1	Permitted	Unrestricted	0.72	0.69
Taiwan	German	1.4056	8.52	2	Restricted	Restricted	0.384	0.34
Thailand	English	1.0969	6.25	3	Restricted	Restricted	0.648	0.701
Turkey	French	0.1842	5.18	2	Permitted	Permitted	0.5564	0.57
USA	English	0.4596	10	1	Restricted	Restricted	0.3	0.29
United Kingdom	English	1.181	8.57	4	Unrestricted	Unrestricted	0.23	0.24
Uruguay	French	.	5	2	Prohibited	Permitted	0.5	0.633
Venezuela	French	.	6.37	.	Restricted	Permitted	0.568	0.5194
Zimbabwe	English	0.0727	3.68	4	Restricted	Restricted	0.678	0.71

Table 4
Correlation matrix

The legal origin variable is following that in LLSV(1997, 1998). Private credit is a measure of host countries' financial sector development, calculated as the value of credits by financial intermediaries to the private sector divided by GDP. Rule of Law is an assessment of the law and order tradition in host countries. Creditor Rights is a measure of host countries' basic legal protections against borrower expropriation. Both Rule of Law and Creditor Rights are from LLSV(1998). Banks owning non-financial firms measures restrictions on the abilities of banks to own and control non-financial firms. Non-financial firms owning banks measures restrictions on the abilities of non-financial firms to own and control banks. Concentration of assets measures the fraction of assets held by the five largest commercial banks in borrower countries. Concentration of deposits measures the fractions of deposits held by the five largest commercial banks in borrower countries.

	Ln(loan price)	Scandinavian Origin	French Origin	German Origin	Private Credit	Creditor Rights	Rule of Law	Non-financial firms owning bank share	Bank owning Non-financial firms	Concentration of deposits	Concentration of assets
Ln(loan price)	1.000										
Scandinavian Origin	-0.142	1.000									
French Origin	-0.129	-0.030	1.000								
German Origin	-0.080	-0.013	-0.032	1.000							
Private Credit	-0.201	-0.008	0.101	0.443	1.000						
Creditor Rights	-0.195	0.098	0.020	0.201	0.706	1.000					
Rule of Law	0.136	0.033	-0.646	-0.096	-0.143	-0.417	1.000				
Non-financial firms owning bank share	-0.222	0.097	0.460	0.225	0.755	0.611	-0.498	1.000			
Bank owning non-financial firms	-0.244	0.224	0.415	0.122	0.757	0.710	-0.398	0.847	1.000		
Concentration of deposits	-0.189	0.422	0.568	0.058	0.167	0.054	-0.403	0.324	0.456	1.000	
Concentration of assets	-0.182	0.383	0.589	0.066	0.150	0.018	-0.411	0.285	0.407	0.982	1.000

Table 5 Regression results: the impacts of banking-commerce integration on loan pricing

This table reports the impacts of banking-commerce integration on loan pricing after controlling the effects of legal, institutional and other loan variables. The dependent variable is Ln (loan price). The two banking-commerce integration variables are 'Non-financial firms owning bank share' and 'bank own non-financial firms'. 'Banks owning non-financial firms' measures restrictions on the abilities of banks to own and control non-financial firms. 'Non-financial firms owning banks' measures restrictions on the abilities of non-financial firms to own and control banks. Private credit is a measure of host countries' financial sector development, calculated as the value of credits by financial intermediaries to the private sector divided by GDP. Private credit is from Beck, Demirguc-Kunt and Levine (2000). Rule of Law is an assessment of the law and order tradition in host countries. Creditor Rights is a measure of host countries' basic legal protections against borrower expropriation. Both Rule of Law and Creditor Rights are from LLSV(1998). We include some loan variables in the regressions to account for their effects on loan pricing. The results for some control variables, such as borrower credit ratings, SIC, loan purposes and year dummies, are not reported here. White heteroskedasticity-consistent standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

	Regression 1 Domestic	Regression 2 Foreign	Regression 3 Domestic	Regression 4 Foreign	Regression 5 Domestic	Regression 6 Foreign	Regression 7 Full Sample	Regression 8 Full Sample
Scandinavian Origin Dummy	-0.826 ***	-0.442 ***	-0.737 ***	-0.45 ***	-0.734 ***	-0.451 ***	-0.623 ***	-0.619 ***
	(0.2299)	(0.0735)	(0.2259)	(0.0743)	(0.2081)	(0.0739)	(0.0417)	(0.0411)
French Origin Dummy	-0.747 ***	-0.191 ***	-0.725 ***	-0.238 ***	-0.626 ***	-0.226 ***	-0.278 ***	-0.284 ***
	(0.1003)	(0.05)	(0.1016)	(0.0539)	(0.1074)	(0.0514)	(0.0276)	(0.0273)
German Origin Dummy	-0.317 **	-0.04	-0.406 ***	-0.06	-0.676 ***	-0.016	-0.046	-0.018
	(0.1433)	(0.0637)	(0.163)	(0.0644)	(0.2077)	(0.0658)	(0.0344)	(0.0357)
Private Credit	-0.077	-0.237 ***	0.22	-0.244 ***	0.242	-0.246 ***	-0.294 ***	-0.282 ***
	(0.2034)	(0.0766)	(0.3147)	(0.0782)	(0.2339)	(0.0761)	(0.055)	(0.047)
Rule of Law	-0.187 ***	-0.077 ***	-0.205 ***	-0.078 ***	-0.135 ***	-0.084 ***	-0.043 ***	-0.054 ***
	(0.0464)	(0.0137)	(0.0538)	(0.0138)	(0.0485)	(0.0141)	(0.0088)	(0.0089)
Credit Rights	-0.222 ***	-0.065 ***	-0.237 ***	-0.085 ***	-0.141 ***	-0.087 ***	-0.064 ***	-0.076 ***
	(0.0453)	(0.017)	(0.0469)	(0.0188)	(0.0542)	(0.0182)	(0.0106)	(0.0114)
Non-financial firms owning bank share			-0.083	0.031			0.023	
			(0.0684)	(0.0251)			(0.015)	
Bank Own Non-financial Firms					-0.341 ***	0.057 ***		0.051 ***
					(0.134)	(0.0205)		(0.0165)
Line of Credit	-0.169 ***	-0.221 ***	-0.169 ***	-0.223 ***	-0.169 ***	-0.229 ***	-0.225 ***	-0.225 ***
	(0.0072)	(0.0205)	(0.0072)	(0.0207)	(0.0072)	(0.0208)	(0.0059)	(0.0059)
Syndicated Dummy	-0.059 ***	-0.001	-0.059 ***	0.002	-0.059 ***	0.001	-0.055 ***	-0.055 ***
	(0.0115)	(0.0459)	(0.0115)	(0.046)	(0.0115)	(0.046)	(0.0106)	(0.0107)
Ln (tranche amount)	-0.185 ***	-0.176 ***	-0.184 ***	-0.177 ***	-0.184 ***	-0.177 ***	-0.192 ***	-0.192 ***
	(0.0032)	(0.0094)	(0.0032)	(0.0095)	(0.0032)	(0.0095)	(0.0026)	(0.0026)
Ln (lender number)	0.017 **	-0.042 ***	0.016 **	-0.043 ***	0.016 *	-0.04 ***	-0.009 **	-0.009 **
	(0.0081)	(0.0142)	(0.0081)	(0.0144)	(0.0081)	(0.0144)	(0.0042)	(0.0041)
Covenant Dummy	0.019 **	0.1 ***	0.019 **	0.097 ***	0.019 **	0.098 ***	0.049 ***	0.049 ***
	(0.008)	(0.0285)	(0.008)	(0.0287)	(0.008)	(0.0287)	(0.0065)	(0.0065)
US dummy	0.319 ***	0.296 ***	0.364 ***	0.286 ***	0.041	0.331 ***	0.268 ***	0.312 ***
	(0.0653)	(0.06)	(0.078)	(0.0627)	(0.1272)	(0.0664)	(0.0284)	(0.0324)
Obs #	29,659	5,537	29,658	5,481	29,658	5,481	49,897	49,897
Adj. R-sqr	0.4521	0.4321	0.4522	0.4356	0.4524	0.4363	0.5227	0.5228

Table 6 Regression results: the impacts of banking concentration on loan pricing

This table reports the impacts of banking concentration on loan pricing after controlling the effects of legal, institutional and other loan variables. The dependent variable is Ln (loan price). The two banking concentration variables are 'concentration of assets' and 'concentration of deposits'. 'Concentration of assets' measures the fraction of assets held by the five largest commercial banks in borrower countries. 'Concentration of deposits' measures the fractions of deposits held by the five largest commercial banks in borrower countries. Private credit is a measure of host countries' financial sector development, calculated as the value of credits by financial intermediaries to the private sector divided by GDP. Private credit is from Beck, Demirguc-Kunt and Levine (2000). Rule of Law is an assessment of the law and order tradition in host countries. Creditor Rights is a measure of host countries' basic legal protections against borrower expropriation. Both Rule of Law and Creditor Rights are from LLSV (1998). We include some loan variables in the regressions to account for their effects on loan pricing. The results for some control variables, such as borrower credit ratings, SIC, loan purposes and year dummies, are not reported here. White heteroskedasticity-consistent standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

	Regression 1 Domestic	Regression 2 Foreign	Regression 3 Domestic	Regression 4 Foreign	Regression 5 Domestic	Regression 6 Foreign	Regression 7 Full sample	Regression 8 Full sample
Scandinavian Origin Dummy	-0.826 ***	-0.442 ***	-0.826 ***	-0.479 ***	-0.865 ***	-0.486 ***	-0.604 ***	-0.61 ***
	(0.2299)	(0.0735)	(0.2319)	(0.0792)	(0.2314)	(0.0798)	(0.0423)	(0.0427)
French Origin Dummy	-0.747 ***	-0.191 ***	-0.744 ***	-0.382 ***	-0.716 ***	-0.385 ***	-0.341 ***	-0.347 ***
	(0.1003)	(0.05)	(0.0989)	(0.0564)	(0.0986)	(0.0573)	(0.0279)	(0.0281)
German Origin Dummy	-0.317 **	-0.04	-0.32 **	-0.132 **	-0.285 *	-0.145 **	-0.113 ***	-0.115 ***
	(0.1433)	(0.0637)	(0.1432)	(0.0656)	(0.1476)	(0.066)	(0.0339)	(0.0344)
Private Credit	-0.077	-0.237 ***	-0.012	-0.304 ***	0.041	-0.305 ***	-0.301 ***	-0.295 ***
	(0.2034)	(0.0766)	(0.2257)	(0.0788)	(0.2261)	(0.0791)	(0.0474)	(0.0479)
Rule of Law	-0.187 ***	-0.077 ***	-0.185 ***	-0.073 ***	-0.196 ***	-0.072 ***	-0.047 ***	-0.047 ***
	(0.0464)	(0.0137)	(0.0506)	(0.014)	(0.0528)	(0.0139)	(0.0086)	(0.0087)
Credit Rights	-0.222 ***	-0.065 ***	-0.214 ***	-0.162 ***	-0.178 ***	-0.154 ***	-0.114 ***	-0.108 ***
	(0.0453)	(0.017)	(0.0527)	(0.022)	(0.0595)	(0.0223)	(0.0126)	(0.0132)
Concentration of Assets			0.119	-0.497 ***			-0.313 ***	
			(0.3091)	(0.1006)			(0.0564)	
Concentration of Deposits					0.363	-0.383 ***		-0.221 ***
					(0.3379)	(0.1014)		(0.059)
Line of Credit	-0.169 ***	-0.221 ***	-0.169 ***	-0.222 ***	-0.169 ***	-0.221 ***	-0.224 ***	-0.224 ***
	(0.0072)	(0.0205)	(0.0072)	(0.0207)	(0.0072)	(0.0207)	(0.0059)	(0.0059)
Syndicated Dummy	-0.059 ***	-0.001	-0.059 ***	0.007	-0.059 ***	0.007	-0.054 ***	-0.054 ***
	(0.0115)	(0.0459)	(0.0115)	(0.0457)	(0.0115)	(0.0457)	(0.0106)	(0.0106)
Ln (tranche amount)	-0.185 ***	-0.176 ***	-0.184 ***	-0.179 ***	-0.184 ***	-0.178 ***	-0.193 ***	-0.192 ***
	(0.0032)	(0.0094)	(0.0032)	(0.0096)	(0.0032)	(0.0096)	(0.0027)	(0.0027)
Ln (lender number)	0.017 **	-0.042 ***	0.017 **	-0.029 **	0.017 **	-0.033 **	-0.008 **	-0.008 **
	(0.0081)	(0.0142)	(0.0081)	(0.0148)	(0.0081)	(0.0147)	(0.0041)	(0.0042)
Covenant Dummy	0.019 **	0.1 ***	0.019 **	0.091 ***	0.019 **	0.091 ***	0.049 ***	0.049 ***
	(0.008)	(0.0285)	(0.008)	(0.0288)	(0.008)	(0.0288)	(0.0065)	(0.0065)
US dummy	0.319 ***	0.296 ***	0.387 **	-0.065	0.545 **	-0.045	0.074 *	0.095 **
	(0.0653)	(0.06)	(0.1822)	(0.0759)	(0.2225)	(0.0808)	(0.0382)	(0.043)
Obs #	29,659	5,537	29,658	5,402	29,658	5,402	49,745	49,745
Adj. R-sqr	0.4521	0.4321	0.4521	0.4388	0.4522	0.4375	0.5236	0.5234

Table 7 Regression results: the impacts of banking-commerce integration and banking concentration on loan pricing

This table reports the impacts of banking-commerce integration and banking concentration on loan pricing. The dependent variable is Ln (loan price). 'Bank own non-financial firms' measures restrictions on the abilities of banks to own and control non-financial firms. 'Concentration of assets' measures the fraction of assets held by the five largest commercial banks in borrower countries. High concentration dummy variable is equal to 1 if 'concentration of assets' is greater or equal to 0.7 (zero otherwise). We also include an interaction term which is the product of 'Bank own non-financial firms' and High concentration dummy. We also include loan variables in the regressions to account for their effects on loan pricing. The results for some control variables, such as borrower credit ratings, SIC, loan purposes and year dummies, are not reported here. White heteroskedasticity-consistent standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

	Regression 1	**Regression 2**	**Regression 3**	**Regression 4**	**Regression 5**	**Regression 6**
	Domestic	**Foreign**	**Domestic**	**Foreign**	**Domestic**	**Foreign**
Scandinavian Origin Dummy	-0.826 ***	-0.442 ***	-0.734 ***	-0.492 ***	-0.663***	-0.566***
	(0.2299)	(0.0735)	(0.2102)	(0.0783)	(0.2015)	(0.0752)
French Origin Dummy	-0.747 ***	-0.191 ***	-0.626 ***	-0.384 ***	-0.741***	-0.422***
	(0.1003)	(0.05)	(0.1080)	(0.0556)	(0.1573)	(0.0605)
German Origin Dummy	-0.317 **	-0.04	-0.679 ***	-0.090	-0.701***	-0.053
	(0.1433)	(0.0637)	(0.2017)	(0.0676)	(0.2027)	(0.0677)
Private Credit	-0.077	-0.237 ***	0.247	-0.326 ***	0.274	-0.329***
	(0.2034)	(0.0766)	(0.2520)	(0.0775)	(0.2724)	(0.0783)
Rule of Law	-0.187 ***	-0.077 ***	-0.134 ***	-0.079 ***	-0.211***	-0.086***
	(0.0464)	(0.0137)	(0.0521)	(0.0142)	(0.041)	(0.0144)
Credit Rights	-0.222 ***	-0.065 ***	-0.139 **	-0.162 ***	-0.155***	-0.149***
	(0.0453)	(0.017)	(0.0626)	(0.0219)	(0.0571)	(0.0212)
Bank Own Non-financial Firms			-0.345***	0.048**	-0.391***	0.068***
			(0.1305)	(0.0225)	(0.1293)	(0.0215)
Concentration of Assets			0.006	-0.429***		
			(0.3106)	(0.1065)		
High concentration dummy					-0.848	-0.192*
					(0.615)	(0.1025)
Bank Own Non-financial Firms*High concentration					0.453*	0.049
					(0.2537)	(0.0521)
Line of Credit	-0.169 ***	-0.221 ***	-0.169 ***	-0.228 ***	-0.169***	-0.23***
	(0.0072)	(0.0205)	(0.0072)	(0.0208)	(0.0072)	(0.0208)
Syndicated Dummy	-0.059 ***	-0.001	-0.059 ***	0.008	-0.059***	0.004
	(0.0115)	(0.0459)	(0.0114)	(0.0456)	(0.0114)	(0.0457)
Ln (tranche amount)	-0.185 ***	-0.176 ***	-0.184 ***	-0.180 ***	-0.184***	-0.178***
	(0.0032)	(0.0094)	(0.0032)	(0.0095)	(0.0032)	(0.0095)
Ln (lender number)	0.017 **	-0.042 ***	0.016 **	-0.028 *	0.016**	-0.034**
	(0.0081)	(0.0142)	(0.0081)	(0.0147)	(0.0081)	(0.0145)
Covenant Dummy	0.019 **	0.10 ***	0.019 **	0.092 ***	0.019**	0.09***
	(0.008)	(0.0285)	(0.008)	(0.0287)	(0.008)	(0.0287)
US dummy	0.319 ***	0.296 ***	0.041	0.012	0.049	0.117
	(0.0653)	(0.06)	(0.2040)	(0.0868)	(0.1918)	(0.0792)
Obs #	29,659	5,537	29,659	5,402	29,659	5,404
Adj. R-sqr	0.4521	0.4321	0.4524	0.4393	0.4526	0.4381

Table 8 Regression results: excluding the U.S. data observations

This table reports the impacts of banking regulation and supervision variables on loan pricing after controlling the effects of legal, institutional and other loan variables, basing the data sample excluding the U.S. data. The dependent variable is Ln (loan price). 'Banks owning non-financial firms' measures restrictions on the abilities of banks to own and control non-financial firms. 'Non-financial firms owning banks' measures restrictions on the abilities of non-financial firms to own and control banks. Concentration of assets measures the fraction of assets held by the five largest commercial banks in borrower countries. Concentration of deposits measures the fractions of deposits held by the five largest commercial banks in borrower countries. The results for some control variables, such as borrower credit ratings, SIC, loan purposes and year dummies, are not reported here. We include some loan variables in the regressions to account for their effects on loan pricing. White heteroskedasticity-consistent standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

	Regression 1	**Regression 2**	**Regression 3**	**Regression 4**	**Regression 5**	**Regression 6**	**Regression 7**	**Regression 8**
	Domestic	**Foreign**	**Domestic**	**Foreign**	**Domestic**	**Foreign**	**Domestic**	**Foreign**
Scandinavian Origin Dummy	-0.531**	-0.386***	-0.55***	-0.387***	-0.688***	-0.42***	-0.741***	-0.431***
	(0.2175)	(0.0762)	(0.1998)	(0.0759)	(0.2276)	(0.0816)	(0.2295)	(0.0818)
French Origin Dummy	-0.841***	-0.185***	-0.728***	-0.174***	-0.871***	-0.312***	-0.843***	-0.314***
	(0.1183)	(0.0541)	(0.1227)	(0.0518)	(0.116)	(0.0571)	(0.1144)	(0.0578)
German Origin Dummy	-0.546***	-0.029	-0.868***	0.028	-0.387***	-0.091	-0.34**	-0.101
	(0.157)	(0.0667)	(0.207)	(0.0683)	(0.1345)	(0.068)	(0.1382)	(0.0684)
Private Credit	0.453	-0.24***	0.413*	-0.251***	0.079	-0.29***	0.135	-0.289***
	(0.3126)	(0.0786)	(0.2398)	(0.0766)	(0.2209)	(0.0791)	(0.2229)	(0.0793)
Rule of Law	-0.242***	-0.08***	-0.133**	-0.087***	-0.209***	-0.076***	-0.221***	-0.075***
	(0.0606)	(0.0141)	(0.0561)	(0.0143)	(0.0563)	(0.0142)	(0.0584)	(0.0142)
Credit Rights	-0.274***	-0.068***	-0.148***	-0.071***	-0.223***	-0.138***	-0.182***	-0.129***
	(0.0492)	(0.0189)	(0.0554)	(0.0184)	(0.0567)	(0.0221)	(0.0627)	(0.0225)
Non-financial firms owning bank share	-0.148**	0.03						
	(0.0739)	(0.0252)						
Bank Own Non-financial Firms			-0.454***	0.071***				
			(0.1451)	(0.0212)				
Concentration of Assets					0.291	-0.44***		
					(0.3257)	(0.1017)		
Concentration of Deposits							0.552	-0.318***
							(0.354)	(0.1024)
Line of Credit	-0.106*	-0.29***	-0.106*	-0.304***	-0.113*	-0.29***	-0.114*	-0.289***
	(0.0627)	(0.032)	(0.0624)	(0.0323)	(0.0624)	(0.0323)	(0.0622)	(0.0324)
Syndicated Dummy	0.008	-0.433***	-0.016	-0.434***	0.011	-0.432***	0.018	-0.424***
	(0.1331)	(0.1158)	(0.1309)	(0.1163)	(0.1339)	(0.1146)	(0.1336)	(0.1144)
Ln (tranche amount)	-0.176***	-0.149***	-0.177***	-0.15***	-0.181***	-0.151***	-0.181***	-0.149***
	(0.0241)	(0.0154)	(0.0235)	(0.0154)	(0.0239)	(0.0159)	(0.0238)	(0.0158)
Ln (lender number)	-0.073	-0.05***	-0.091*	-0.045***	-0.048	-0.037***	-0.044	-0.041**
	(0.0522)	(0.0162)	(0.0534)	(0.0162)	(0.0523)	(0.0168)	(0.0523)	(0.0167)
Covenant Dummy	0.12	0.306***	0.123	0.311***	0.142	0.273***	0.137	0.275***
	(0.0957)	(0.0674)	(0.0934)	(0.068)	(0.0953)	(0.0704)	(0.0957)	(0.0699)
Obs #	829	2,736	829	2,736	829	2,736	829	2,736
Adj. R-sqr	0.4576	0.4184	0.4638	0.4205	0.4549	0.4230	0.4568	0.4207

Table 9 Regression results: Bootstrap

This table reports the regression results using bootstrapping. The dependent variable is Ln (loan price). 'Banks owning non-financial firms' measures restrictions on the abilities of banks to own and control non-financial firms. 'Non-financial firms owning banks' measures restrictions on the abilities of non-financial firms to own and control banks. Concentration of assets measures the fraction of assets held by the five largest commercial banks in borrower countries. Concentration of deposits measures the fractions of deposits held by the five largest commercial banks in borrower countries. The results for some control variables, such as borrower credit ratings, SIC, loan purposes and year dummies, are not reported here. We include some loan variables in the regressions to account for their effects on loan pricing. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

	Regression 1	**Regression 2**	**Regression 3**	**Regression 4**	**Regression 5**	**Regression 6**	**Regression 7**	**Regression 8**
	Domestic	**Foreign**	**Domestic**	**Foreign**	**Domestic**	**Foreign**	**Domestic**	**Foreign**
Scandinavian Origin Dummy	-0.548*	-0.401***	-0.571**	-0.404***	-0.71**	-0.432***	-0.756**	-0.444***
	(0.3114)	(0.09)	(0.2862)	(0.0907)	(0.3137)	(0.0964)	(0.3224)	(0.1017)
French Origin Dummy	-0.834***	-0.189***	-0.72***	-0.181***	-0.866***	-0.315***	-0.841***	-0.321***
	(0.1651)	(0.0654)	(0.1764)	(0.0633)	(0.1639)	(0.069)	(0.1613)	(0.0707)
German Origin Dummy	-0.534**	-0.03	-0.864***	0.027	-0.375**	-0.092	-0.328*	-0.103
	(0.2131)	(0.0795)	(0.2864)	(0.083)	(0.1805)	(0.0823)	(0.1935)	(0.0832)
Private Credit	0.424	-0.248***	0.414	-0.261***	0.086	-0.296***	0.132	-0.295***
	(0.4441)	(0.0948)	(0.3247)	(0.0947)	(0.3065)	(0.0974)	(0.3113)	(0.0944)
Rule of Law	-0.232***	-0.078***	-0.119	-0.085***	-0.2**	-0.075***	-0.216***	-0.074***
	(0.0873)	(0.0166)	(0.0841)	(0.0176)	(0.0818)	(0.0171)	(0.0832)	(0.0173)
Credit Rights	-0.266***	-0.07***	-0.141*	-0.073***	-0.215***	-0.139***	-0.172**	-0.132***
	(0.0716)	(0.0226)	(0.0802)	(0.0229)	(0.0801)	(0.0266)	(0.0874)	(0.0275)
Non-financial firms owning bank share	-0.143	0.032						
	(0.1017)	(0.0301)						
Bank Own Non-financial Firms			-0.456**	0.071***				
			(0.2057)	(0.0255)				
Concentration of Assets					0.317	-0.436***		
					(0.4389)	(0.1227)		
Concentration of Deposits							0.587	-0.326***
							(0.4727)	(0.1232)
Line of Credit	-0.107	-0.291***	-0.107	-0.305***	-0.116	-0.286***	-0.118	-0.289***
	(0.0863)	(0.0396)	(0.0822)	(0.038)	(0.0845)	(0.0386)	(0.0858)	(0.0396)
Syndicated Dummy	0.023	-0.422***	0.01	-0.428***	0.033	-0.427***	0.041	-0.419***
	(0.1846)	(0.1412)	(0.1749)	(0.1409)	(0.1814)	(0.1417)	(0.1804)	(0.1395)
Ln (tranche amount)	-0.18***	-0.151***	-0.179***	-0.152***	-0.184***	-0.152***	-0.184***	-0.15***
	(0.0326)	(0.0183)	(0.0326)	(0.0185)	(0.0326)	(0.019)	(0.033)	(0.019)
Ln (lender number)	-0.07	-0.048**	-0.086	-0.044**	-0.043	-0.035*	-0.039	-0.04*
	(0.0724)	(0.02)	(0.074)	(0.0194)	(0.074)	(0.0197)	(0.0728)	(0.0206)
Covenant Dummy	0.121	0.306***	0.129	0.308***	0.147	0.276***	0.138	0.277***
	(0.1296)	(0.084)	(0.1287)	(0.0848)	(0.13)	(0.0853)	(0.1319)	(0.085)
Obs #	29,658	5,481	29,658	5,481	29,658	5,402	29,658	5,402
Adj. R-sqr	0.5403	0.4377	0.5440	0.4403	0.5379	0.4432	0.5396	0.4406

Table 10 Regression results: adding more loan variables

This table reports the impacts of banking regulation and supervision on loan pricing adding two additional loan variables. The two added loan variables are ln (maturity) and secured dummy variables. White heteroskedasticity-consistent standard errors are in parentheses. ***, ** and * denote significance at the 1%, 5% and 10% levels, respectively.

	Regression 1	Regression 2	Regression 3	Regression 4	Regression 5	Regression 6	Regression 7	Regression 8
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
Scandinavian Origin Dummy	-0.672***	-0.525***	-0.684***	-0.527***	-0.786***	-0.557***	-0.84***	-0.568***
	(0.2292)	(0.0802)	(0.215)	(0.0799)	(0.2414)	(0.0867)	(0.2399)	(0.087)
French Origin Dummy	-0.761***	-0.256***	-0.678***	-0.241***	-0.774***	-0.403***	-0.73***	-0.407***
	(0.1116)	(0.0582)	(0.1147)	(0.0556)	(0.1107)	(0.0615)	(0.1124)	(0.0626)
German Origin Dummy	-0.466***	-0.055	-0.739***	-0.013	-0.353**	-0.133*	-0.307*	-0.145**
	(0.1727)	(0.0695)	(0.2152)	(0.0713)	(0.1545)	(0.0705)	(0.1602)	(0.0712)
Private Credit	0.238	-0.316***	0.227	-0.312***	-0.024	-0.376***	0.041	-0.377***
	(0.3143)	(0.0854)	(0.2401)	(0.0825)	(0.2301)	(0.0854)	(0.2295)	(0.0856)
Rule of Law	-0.233***	-0.074***	-0.162***	-0.08***	-0.211***	-0.069***	-0.222***	-0.067***
	(0.0485)	(0.0149)	(0.0472)	(0.0152)	(0.0462)	(0.0154)	(0.0471)	(0.0152)
Credit Rights	-0.232***	-0.077***	-0.135**	-0.078***	-0.192***	-0.156***	-0.144**	-0.148***
	(0.0469)	(0.02)	(0.0532)	(0.0196)	(0.0574)	(0.0242)	(0.0647)	(0.0246)
Non-financial firms owning bank share	-0.102	0.041						
	(0.068)	(0.0273)						
Bank Own Non-financial Firms			-0.358***	0.056**				
			(0.1281)	(0.0223)				
Concentration of Assets					0.240	-0.510***		
					(0.3228)	(0.1084)		
Concentration of Deposits							0.545	-0.392***
							(0.3429)	(0.1094)
Line of Credit	-0.147***	-0.197***	-0.147***	-0.202***	-0.147***	-0.193***	-0.147***	-0.193***
	(0.0082)	(0.0233)	(0.0082)	(0.0235)	(0.0082)	(0.0233)	(0.0082)	(0.0234)
Syndicated Dummy	-0.261***	-0.245***	-0.261***	-0.248***	-0.261***	-0.256***	-0.261***	-0.251***
	(0.0187)	(0.0741)	(0.0186)	(0.0741)	(0.0187)	(0.0734)	(0.0187)	(0.0733)
Ln (tranche amount)	-0.12***	-0.109***	-0.12***	-0.108***	-0.12***	-0.105***	-0.12***	-0.106***
	(0.0062)	(0.0225)	(0.0062)	(0.0226)	(0.0062)	(0.0225)	(0.0062)	(0.0225)
Ln (lender number)	0.025***	-0.031**	0.025***	-0.028*	0.026***	-0.015	0.026***	-0.019
	(0.0091)	(0.0157)	(0.0091)	(0.0157)	(0.0091)	(0.0162)	(0.0091)	(0.0161)
Covenant Dummy	-0.065***	0.016	-0.065***	0.015	-0.065***	0.005	-0.065***	0.007
	(0.0127)	(0.0378)	(0.0127)	(0.0379)	(0.0127)	(0.0377)	(0.0127)	(0.0377)
US dummy	0.338***	0.259***	-0.002	0.296***	0.419**	-0.107	0.623***	-0.086
	(0.0813)	(0.0685)	(0.1238)	(0.0724)	(0.1907)	(0.0828)	(0.2268)	(0.0883)
Ln (maturity)	-0.007	0.046***	-0.007	0.047***	-0.007	0.052***	-0.007	0.051***
	(0.0058)	(0.0163)	(0.0058)	(0.0162)	(0.0058)	(0.0162)	(0.0058)	(0.0163)
Secured Dummy	0.676***	0.668***	0.674***	0.676***	0.677***	0.709***	0.677***	0.696***
	(0.06)	(0.1855)	(0.06)	(0.1853)	(0.06)	(0.1838)	(0.06)	(0.1838)
Obs #	25,167	4,715	25,167	4,715	25,167	4,646	25,167	4,646
Adj. R-sqr	0.4653	0.4535	0.4655	0.4540	0.4652	0.4573	0.4653	0.4559